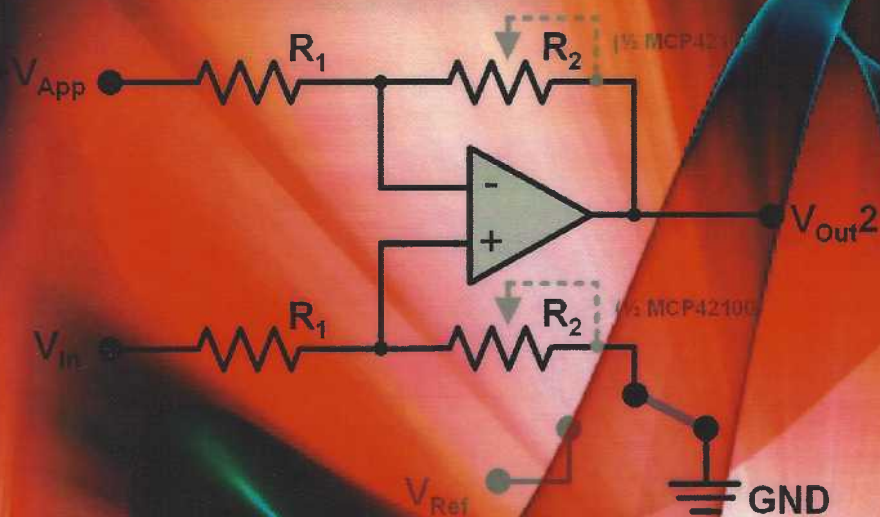


# Telemetry

Research, Technology  
and Applications



Diana Barculo  
Julia Daniels  
Editors

NOVA

$+V_{App}$

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# **TELEMETRY: RESEARCH, TECHNOLOGY AND APPLICATIONS**

**DIANA BARCULO  
AND  
JULIA DANIELS  
EDITORS**

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*Chapter 1*

## **BIOMEDICAL TELEMETRY: TECHNOLOGY AND APPLICATIONS**

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### **ABSTRACT**

Telemetry has now become a vital constituent in the field of medical sciences to remote measurement of biological parameters. Biomedical telemetry provides a means for monitoring and studying human and animal physiologic functions from a remote site with wireless transmission for the goals of minimally disturbing normal activity or free-restraint of target's subject to allow ambulatory freedom. Signals derived from physiologic transducers have been encoded and formatted in many different ways in an effort to improve transmission reliability in air space and water and carrier signals have included radio, sound and light. The long-lived primary and secondary cells have been developed for power source of transmitters. Power can now be transferred at such a radio frequency (RF) across the tissues to implanted biotelemeters using magnetic inductive powering system. Inductive powering of implantable monitoring devices is a widely accepted solution for replacing implanted batteries. Thin film solid state lithium batteries are an attractive to telemetry system of choice, offering high energy density, flexible, lightweight, miniature, rechargeable and longer lifespan so that usable in such applications of implantable medical devices, active radio frequency identification (RFID) tags, flexible displays, and E-paper. The evolution in sophisticated miniaturization provides the improvements of electronic components and assembly capabilities that available to investigators. A new technology of a capsule-camera for endoscopy is now found in sophisticated miniaturized microcontroller implementations. A survey of

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